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EXAMINER	
GEORGE, PATRICIA ANN	
ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/807,944	DE REGE THESAURO ET AL.	
	Examiner	Art Unit	
	Patricia A. George	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-7,10-14,17,20-25 and 28-34* is/are pending in the application.

4a) Of the above claim(s) *17,20-25 and 28-34* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-7,10-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandhu et al (6,099,604) in view of Bringham et al. (6,812,193) and Beitel et al. (WO 02/26906 A1 published April 4, 2002).

Sandhu teaches a chemical-mechanical polishing composition for metal oxides comprising: the generic alumina abrasive (see column 4, line 47) in an amount of about 0 to 25 wt%, which overlaps and encompasses applicants' ranges; preferred polyvalent metal ions, such as from calcium in quantities sufficient for chelating which improves solubility and dispersability of dislodged surface moiety which complexes to water (see column 6, line 11+); and further includes water with solvent (see column 4, lines 34-37) as described in applicants' specification as a liquid carrier.

Sandhu is silent as to the amount of metal ions in the 0.005 to 15 wt % of polyvalent chelating agent, such as applicants' specifically claimed range of about 0.05 to about 50 mmol/kg of metal ions, however Sandhu teaches quantity of chelating agents sufficient to rapidly remove (applicants' intend use increased removal rate- of

para. 52 in applicants' own specification) and that polyvalent chelating is in a quantity sufficient to be functional, which appears to be written on applicants claimed range.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of polishing composition, as Sandhu, to include the specific quantity of metal ions, as applicants' claimed limitation, because Sandhu teaches the presence of metal ions in chelating agents are sufficient to provide rapid removal (applicants' intended use increase removal rate) and therefore a composition of similar results, would have provided similar quantities. Further, as applicants' lower limit of the claimed rage is so small (0.05 mmol/kg) the reference of Sandhu would appear to have at least sufficient quantities to overlap applicants' claimed lower limit. Also, as the reference of Sandhu teaches quantities that are sufficient for chelating, similar compositions (i.e. similar quantities) would have similar functions, as in claim 1.

Although Sandhu is silent as to applicants' specific quantity of metal ions.

Bringham et al. (6,812,193) teaches a slurry used for polishing metals (and oxides of such metals), includes about 0.001 to 5 grams/liter of metal ions such as those presented as salts of calcium, chloride ion, which appears to encompass applicants' claimed ranges of about 0.05 to about 5 mmol/kg and about 0.05 to about 10 mmol/kg (see Best and Various Modes...).

Bringham et al. teaches the role of the abrasive is to facilitate material removal by mechanical action and the oxidizing agent, typically inorganic metal salts (i.e. chloride ions), works to enhance mechanical removal via a dissolution process.

It is well understood in the art that the removal of metal with CMP compositions include the removal of the oxide of the metal which is being removed because the composition itself is tuned to create the oxide of the metal through use of oxidizers.

Absent unexpected results, it would have been obvious to one of ordinary skill in the art at the time of invention was made, to include any amount of metal ions, such as applicants' specifically claimed quantity, when teaching the slurry for metal polishing, as Small, because Bringham teaches use of such quantities of metal ions will enhance mechanical removal.

It is noted, that Bringham fails to use the units of mmol/kg of ions as defined in applicants' claims 1, and 10, however, it appears as if the disclosed amounts of metal ions would overlap applicants' claimed mmol/kg upon unit conversion.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to convert the grams/liter, as taught by Bringham, into molarity, as applicants' claimed unit, if the density of the composition is known. Further, the density of the composition can be easily measured.

Sandhu does not explicitly teach species of alumina particles, such as applicants' specifically claimed alpha type.

Beitel teaches use of alpha alumina particles are known (see lines 5-6 of page 20).

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the composition, of Sandhu, to include applicants' specifically claimed alpha type particles, as Beitel, because Beitel teaches such particle types are known to be functional, and use of materials known successfully functional are cost saving.

As to the limitation of pH, Sandhu teaches the pH of any desired range and further elaborates on how to accomplish acidic, basic, or neutral compositions, which encompasses applicants' ranges. See column 7, lines 8-10.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the composition, of Sandhu, to use any pH that is effective for polishing, including applicant's specifically claimed pH range of about 2 to 5, because Sandhu provides one of skill in the art with a reasonable expectation of success by teaching any suitable range of pH is known to be effective, and further such an adjustment involves only routine skill in the art.

Claim Rejections - 35 USC § 103

Claims 4-7, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandhu et al (6,099,604) in view of Beitel et al. (WO 02/26906 A1

published April 4, 2002) as applied to claims 1 and 10 above, further in view of Kauffman (6,432,828).

Sandhu is silent as to types of alumina particles, such as fumed.

Kaufman teaches it is preferred to use abrasives comprising fumed alumina. See column 7, line 38. Kaufman fumed particle abrasives are preferred. Kaufman teaches fumed alumina particles in quantity of about 1-15 wt% which encompasses applicants' ranges, as in claims 5-7 and 12-14. See column 7, line 26, and column 4, line 52.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the composition, of Sandhu, to include applicants' specifically claimed quantities of fumed type alumina particles, because Kaufman teaches such types of abrasive particles are preferred.

Response to Arguments

It is asserted on page 11, that the references of Bringham would not be considered when trying to improve the reference of Sandhu because Bringham is not directed to the same intended use. The reference of Bringham was properly combined with Sandhu because of the benefits to functionality, such a enhanced mechanical removal. Applicants claims are toward a composition, not a method, and therefore the intended uses not claimed, or not providing function limitations have no patentable weight. With this in mind, applicant argument toward intended use, are not commensurate with the scope of the claim language. Further, if applicant's instant

invention was toward a method, the CMP removal of metal is well known to include the creation and removal of phases of metal oxide, and one of skill seeking for motivation of perfecting a CMP metal oxide removal would look to the art of CMP metal removal.

It is inferred on page 11, that the references fails to provide the claimed amount of metal ions, however no evidence is provided to dispute the reference of Sandhu obvious provides said amounts. Applicant's assert the reference of Sandhu does not provide a calcium ions in applicants range. Although Sandhu is silent as to the amount of metal ions in the 0.005 to 15 wt % of polyvalent chelating agent, such as applicants' specifically claimed range of about 0.05 to about 50 mmol/kg of metal ions, Sandhu teaches quantity of chelating agents sufficient to rapidly remove (applicants' intend use increased removal rate- of para. 52 in applicants' own specification) and that polyvalent chelating is in a quantity sufficient to be functional, which appears to be written on applicants claimed range. It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of polishing composition, as Sandhu, to include the specific quantity of metal ions, as applicants' claimed limitation, because Sandhu teaches the presence of metal ions in chelating agents are sufficient to provide rapid removal (applicants' intended use increase removal rate) and therefore a composition of similar results, would have provided similar quantities. Further, as applicants' lower limit of the claimed rage is so small (0.05 mmol/kg) the reference of Sandhu would appear to have at least sufficient quantities to overlap applicants' claimed lower limit. Also, as the reference of Sandhu teaches quantities that are sufficient for

chelating, similar compositions (i.e. similar quantities) would have similar functions, as in claims 1-3.

It is asserted, on page 10, that Sandhu disclose polishing compositions can have any suitable pH, however continues to argue that the reference teaches away from any range of pH because the embodiments of the reference only point to a limited range. Because a reference illustrates a certain range in an embodiment, it does not teach away for other ranges, especially in this case where the reference clearly teaches any suitable range of pH is acceptable. As to the further assertion, on page 12, that non of the references provided guide one of skill to the claimed range of a pH of about 2 to about 5, clearly through applicants own admission Sandhu teaches any suitable range, and further applicants submit the references of both Beitel and Kaufman can have a pH of 4-9, which overlaps and encompasses the claimed range.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia A. George whose telephone number is (571) 272-5955. The examiner can normally be reached on Tue. - Fri. between 9:00 am and 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia A George
Examiner
Art Unit 1794

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Examiner, Art Unit 1794

/Binh X Tran/
Primary Examiner, Art Unit 1792